

## (19) World Intellectual Property Organization

International Bureau



# 

(43) International Publication Date 31 December 2003 (31.12.2003)

### (10) International Publication Number WO 2004/000661 A3

(51) International Patent Classification7:

B65D 41/47

(21) International Application Number:

PCT/US2003/020264

(22) International Filing Date:

25 June 2003 (25.06.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/391,349

25 June 2002 (25.06.2002) US

(71) Applicant (for all designated States except US): STULL TECHNOLOGIES [US/US]; 17 Veronica Avenue, Somerset, NJ 08873 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): STULL, Gene [US/US]; 1 Winston Farm Lane, Far Hills, NJ 07931 (US). AUER, Robert [US/US]; 546 Pen Estates, East Stroudsburg, PA 18301 (US).

(74) Agents: HELFGOTT, Samson et al.; Katten, Muchin, Zavis, Rosenman, 575 Madison Avenue, New York, NY 10022-2585 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

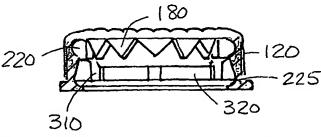
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Published:

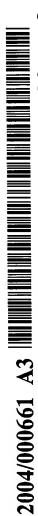
- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 4 March 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: TAMPER-EVIDENT QUICK TWIST CLOSURE



(57) Abstract: A cap (100) with a tamper-evident ring (300) is designed to snap engage a container (200) that is provided with an upper (220) and lower bead (225). A ring of teeth (180) provided along an inside skirt of the cap engage teeth (230) located along an inside wall of the container. When the cap is snapped onto the container, both sets of teeth automatically engage and a plug seal (150) provided on the cap engages the container upper bead (220). By turning the cap (100) clockwise or counterclockwise, the side angles of the teeth force the cap to disengage upwards over the upper bead and unsnap from the container. When the closure is opened for the first time, the ring (300) breaks away from the cap (100) and slides down the container below the lower bead (225), which keeps the ring from coming off the container and provides evidence that the cap had been opened.



### INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/20264

A. CLASSIFICATION OF SUBJECT MATTER				
IPC(7) : B65D 41/47				
US CL : 215/252, 318, 321				
According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED				
Minimum documentation searched (classification system followed by classification symbols)				
U.S.: 215/252, 295, 296, 303, 317, 318, 320, 321, 354				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category *	Citation of document, with indication, where appropriate, of the relevant passages			Relevant to claim No.
Y	US 3,430,798 A (GOYET et al) 04 March 1969, see entire document.			1-22
-	do 3,430,770 A (GOTE) et al) 04 March 1909, see chine document.			1-22
Y	US 3,955,696 A (FINKE) 11 May 1976, see entire document.			1-22
_	oo 5,555,550 it (11112) it may 1570, see chine decamen.			
Y	US 3,910,444 A (FOSTER) 07 October 1975, see entire document.			11-12,21-22
_	, , , , , , , , , , , , , , , , , , , ,			1,
Α	US 3,982,651 A (BRAUN et al) 28 September 1976, see entire document.			1-22
	, , , , , , , , , , , , , , , , , , , ,			
A	US 3,372,834 A (AYOTTE et al) 12 March 1968, see entire document.			1-22
Α	US 6,330,959 B1 (DARK) 18 December 2001, see entire document.			1-22
Further	documents are listed in the continuation of Box C.	See patent	family annex.	
Special categories of cited documents:     "T" later document published after the international filing date or priority				
				plication but cited to understand the
	t defining the general state of the art which is not considered to be	principle or	theory underlying the	nvention
or particu	nai reievaine	"X" document of	particular relevance: 1	he claimed invention cannot be
"E" earlier ap	plication or patent published on or after the international filing date	considered n	ovel or cannot be cons	idered to involve an inventive step
"L" document which may throw doubts on priority claim(s) or which is cited to				
establish the publication date of another citation or other special reason (as "Y" document of particular relevance				
specified)				step when the document is
"O" document referring to an oral disclosure, use, exhibition or other means		combined with one or more other such documents, such combination being obvious to a person skilled in the art		
*P* documen	e muhlishad maine sa sha insamusi anal filipa dan ba sanan da sha			
	t published prior to the international filing date but later than the late claimed	*&" document m	ember of the same pati	ent family
Date of the actual completion of the international search  19 November 2003 (19.11.2003)  Date of mailing of the international search report  22 DEC 2003				
Date of the actual completion of the international search		Late of mailing of the	ne miernational se	3 5 TEC 2003
19 November	r 2003 (19.11.2003)			CY DEC COOP
Name and m	ailing address of the ISA/US	Authorized officer	· · · · · · · · · · · · · · · · · · ·	30011
	il Stop PCT, Attn: ISA/US	Nathan I Maushaus		Sheil H. Veney
Commissioner for Patents		Nathan J. Newhous	•	
P.O. Box 1450 Alexandria, Virginia 22313-1450 Telepho			3)-308-1148	Paralegal Specialist
	o. (703)305-3230	· ·	-	Tech. Center 3700